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Eastern extension of the Dabie-Sulu UHP belt -constraints from bulk chemistry of high P/T rocks-

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It has been controversial for the eastern extent of the Dabie-Sulu UHP belt which is distributed in the boundary between the North China and the South China craton as a collision zone. It was accepted that the Hida belt (Unazuki metamorphic belt) is eastern extension of the Dabie-Sulu belt although the Unazuki belt suffered medium P/T type metamorphism at 250 Ma (e.g. Isozaki, 1997). However, recently two other high P/T metamorphic rocks (Yaeyama and Manotani-Higo metamorphic rocks) have been proposed as possible eastern extension of the UHP belt because metamorphic ages are comparable to the Dabie-Sulu UHP belt (Ishiwatari & Tsujimori, 2003; Osanai et al., 2006). The present study provides protolith information of the new candidates based on bulk major, trace and rare-earth element chemistry. We have systematically collected the metabasite from the pumpellyite-actinolite facies through blueschist facies to epidote-amphibolite facies in the Yaeyama metamorphic belt. Bulk chemistry clearly indicates that protolith of the mabasites in lower grade (PA and bluecschist facies) are ascribed as Oceanic Island basalt whereas the highest grade metabasite (epidote amphibolite facies) is considered as N-MORB and E-MORB origin. In the Manotani-Higo belt, the Manotani metamorphic rocks overlie the Higo metamorphic rocks. The former preserves 180 Ma, high P/T metamorphic minerals whereas the latter was overprinted low P/T metamorphism at 90 Ma. The Manotani metamorphic rocks are mainly composed of metabasite with meta-chert, serpentinite and minor meta-pelite. We have collected the metabasites suffered blueschist/greenschist facies condition. Bulk chemistry suggests that the protolith is relatively Mg-rich and ascribed as OIB or oceanic Island Arc. In summary, the Yaeyama high P/T rocks are the product of subduction of oceanic plate. The Manotani-Higo metamorphic rocks were either Oceanic Island or Oceanic Island Arc origin and suffered subduction zone metamorphism.

Ref. Ishiwatari & Tsujimori (2003) Island Arc, 12, 190-206. Isozaki (1997) Island Arc, 6, 2-24. Osanai et al (2006) Gondwana Research, 9, 152-166.

キーワード: Dabie-Sulu UHP belt, eastern extension, medium P/T metamorphic belt, high P/T metamorphic rocks, bulk chemistry, metabasite
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